



**2025 Orthodontic Faculty Development Fellowship Award  
Dr. Xianrui Yan, University of Florida**

Dr. Xianrui Yang is currently an assistant professor at the University of Florida College of Dentistry (UFCD) and treating patients at the UFCD faculty practice. Born and raised in China, she obtained her D.D.S. and Ph.D. from the West China School of Stomatology at Sichuan University, where she conducted research in both basic science and clinical orthodontics. In the first year of her Ph.D., Dr. Yang began conducting research in extracellular cell biology at the Department of Developmental Biology, Harvard School of Dental Medicine, and then continued her Postdoctoral Research Fellowship at Harvard University. Dr. Yang completed her Orthodontics Residency and Master of Science at the University of Michigan School of Dentistry, and she is a diplomate of the American Board of Orthodontics. Dr. Yang owns 23 patents and has published over 43 scientific articles with more than 1,400 citations.

Orthodontic tooth movement (OTM) is triggered by mechanical forces that are applied to teeth, which lead to biological responses in the alveolar bone and periodontal ligament (PDL). Periodontal ligament stem cells (PDLSCs) are multipotent cells that can differentiate into osteoblasts, fibroblasts, and cementoblasts, which are essential for alveolar bone remodeling during OTM. Understanding the response and regulation of PDLSCs to mechanical forces is crucial for optimizing clinical OTM outcomes. YAP (Yes-associated protein) and TAZ (transcriptional co-activator with PDZ-binding motif) are key components of the Hippo signaling pathway that respond to mechanical cues, such as the tensile and compressive forces experienced by PDLSCs during OTM. Upon activation, YAP/TAZ translocates to the nucleus and interacts with TEAD (TEA domain family member) transcription factors, promoting the expression of genes that influence cell proliferation and differentiation. Dr. Yang's current research aims to further explore the mechanism of YAP/TAZ/TEAD in the behavior and differentiation of PDLSCs, with the ultimate goal of developing innovative therapeutic strategies to optimize OTM outcomes and enable orthodontists to treat patients with malocclusions better.

Dr. Xianrui Yang is committed to making significant contributions to the field of orthodontics as a clinician scientist. This AAOF Graber Family Teaching & Research Award further inspired her professional passion and provides essential resources for studying the biological mechanism of OTM. Dr. Yang is grateful to receive this award from the AAOF, which will also aid her in other external funding applications and support her future academic career development in orthodontics. Dr. Yang enjoys being in academia and teaching the next generation of orthodontists. She and her team will continue to work on exploring the unknown biological mechanisms of mechanotransduction during OTM. The support from AAOF will enable the Yang Lab at UFCD to make more impactful discoveries in the field of orthodontics, advancing diagnosis and treatment mechanisms in the future.